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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/855,026	05/15/2001	Evangelos Tirfon Laskaris	839-1008	7982

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EXAMINER
PEREZ, GUILLERMO

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/855,026	LASKARIS ET AL.	
	Examiner	Art Unit	
	Guillermo Perez	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a)☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: .

DETAILED ACTION

Claim Objections

Claim 7 is objected to because of the following informalities: in the third line: "said pin" should read ---said dowel---. Appropriate correction is required.

Claim 26 is objected to because of the following informalities: in the third line: "the dowel" should read ---a dowel---. Appropriate correction is required.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-27 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-23 of copending Application No. 10/218,487;

over claims 1-27 of copending Application No. 09/854,939;

over claims 1-21 of copending Application No. 09/854,938;

over claims 1-21 of copending Application No. 09/854,932;

over claims 1-16 of copending Application No. 09/854,933; and

over claims 1-23 of copending Application No. 09/854,946. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications claim the coil winding support means.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-4, 10-18, 20-21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shervington et al. (U. S. Pat. 5,166,569) in view of Sterret et al. (U. S. Pat. 4,184,089).

Shervington et al. disclose a rotor (figure 4) comprising:

a rotor core (28);

a coil winding (28) extending around at least a portion of the rotor core (28), the coil winding (28) having:

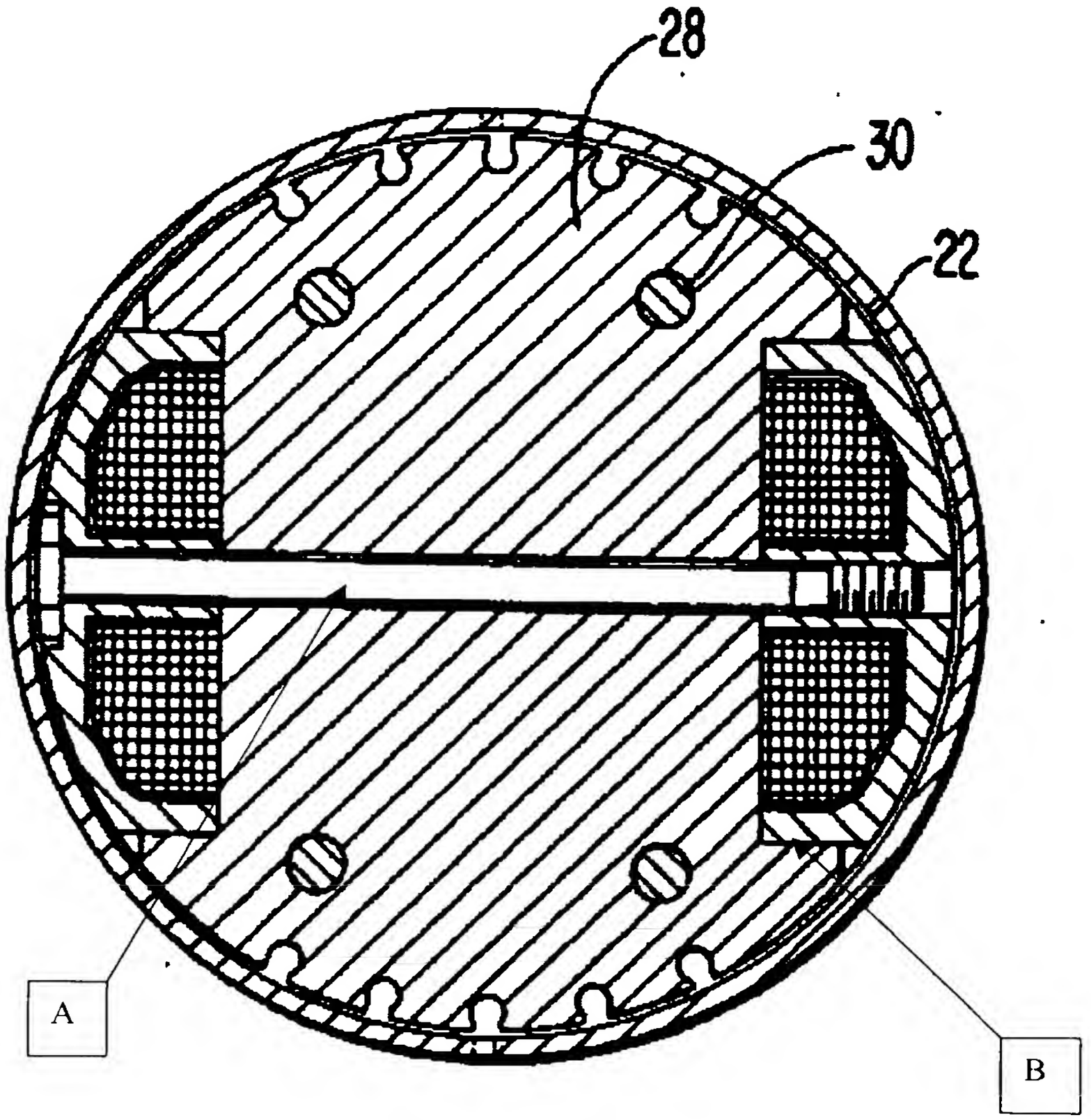
- a pair of side sections on opposite sides of the rotor core (28);

at least one tension rod (A in figure attached) extending between the pair of side sections of the coil winding and through the rotor (28), in which

- a first end of the tension rod (A) is proximate a first side section of the coil winding, and
- a second end of the tension rod (A) is proximate an opposite side section of the coil winding;

a coil housing (B) at each of opposite ends of the tension rod (A), in which the housing (B)

- wraps around the coil winding, and
- is attached to the tension rod (A).



Shervington et al. disclose that the coil housing (B) is a U-shaped channel. Shervington et al. disclose that the tension rod (A) extends through a longitudinal axis of the rotor (28). Shervington et al. disclose that the tension rod (A) extends through conduits in the rotor core (28). Shervington et al. disclose that the tension rod (A) is

spaced from rotor walls of the conduits. Shervington et al. disclose a method for supporting a coil winding (28) on a rotor core (28) of a machine comprising:

- extending a tension bar (A) through a conduit in the rotor core (28), such that a first end of the tension bar (A) is proximate one side of the coil winding (28) and a second end of the tension bar (A) is proximate an opposite side of the coil winding (28);
- inserting a housing (B) over a portion of the coil (28);
- attaching an end of the tension bar (A) to the housing (B).

Shervington et al. disclose inserting a second housing (B) over a second portion of the coil (28) and attaching the second housing (B) to a second end of the tension bar (A). Shervington et al. disclose inserting a second housing (B) over a second portion of the coil (28) an attaching the second housing (B) to a second end of the tension bar (A), in which the tension bar (A) extends through a rotational axis of the rotor core (28), and the first portion and second portion of the coil (28) are on opposite sides of the rotor (28). Shervington et al. disclose a rotor (28) for a machine comprising:

a rotor core (28) having:

- a conduit orthogonal to a longitudinal axis of the rotor (28);
- a racetrack coil winding (28) in a planar racetrack shape parallel to the longitudinal axis of the rotor (28);
- a tension rod (A) inside the conduit of the core (28), the tension rod (A) having:
    - a first end proximate to one side of the coil winding (28) and

- an opposite end proximate to an opposite side of the coil winding (28); and

- a housing (B) coupling the coil winding (28) to the ends of the tension rod (A).

Shervington et al. disclose a plurality of conduits orthogonal to the longitudinal axis of the rotor core (28) and in a plane defined by the coil (28).

However, Shervington et al. do not disclose that the coil is superconducting. Shervington et al. do not disclose that the rotor core is in an internal vacuum. Shervington et al. do not disclose a cryogenic coupling providing cooling fluid to the coil winding, in which the housing and tension rod are cooled by conduction from the coil winding. Shervington et al. do not disclose that the housing is formed of a metal material selected from a group consisting of aluminum, Inconel, and titanium alloys. Shervington et al. do not disclose that the tension rod is formed of a high-strength and non-metallic metal alloy. Shervington et al. do not disclose that the tension rod is formed of an Inconel metal alloy. Shervington et al. do not disclose cryogenically cooling the coil, and cooling the housing and tension rod by heat transfer between the coil and the housing and tension rod.

Sterret et al. disclose that the coil (64) is superconducting. Sterret et al. disclose that the rotor core is in an internal vacuum (column 1, lines 27-31). Sterret et al. disclose a cryogenic coupling (17) providing cooling fluid to the coil winding (64), in which the housing (44) and tension rod (23) are cooled by conduction from the coil winding (64). Sterret et al. disclose cryogenically cooling the coil (64), and cooling the

housing (44) and tension rod (23) by heat transfer between the coil (64) and the housing (44) and tension rod (23). The invention of Sterret et al. has the purpose of properly mount the cryogenic temperature portion of the rotor.

It would have been obvious at the time the invention was made to modify the rotor of Shervington et al. and provide it with the superconducting cooling configuration disclosed by Sterret et al. for the purpose of properly mount the cryogenic temperature portion of the rotor.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate the fastening means with the claimed materials since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

2. Claims 5-6, 9, and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shervington et al. in view of Sterret et al. as applied to claims 1, 16, and 21 above, and further in view of Laskaris (U. S. Pat. 3,991,333).

Shervington et al. and Sterret et al. substantially teach the claimed invention except that it does not show a dowel coupling the housing to the tension rod. Neither Shervington et al. nor Sterret et al. disclose a hollow pin coupling the housing to the tension rod. Neither Shervington et al. nor Sterret et al. disclose a hollow pin formed of a high strength material selected from a group of metals consisting of Inconel and titanium alloys. Neither Shervington et al. nor Sterret et al. disclose a dowel pin for

securing the housing to the tension rod. Neither Shervington et al. nor Sterret et al. disclose that the dowel is hollow. Neither Shervington et al. nor Sterret et al. disclose an insulating tube sleeve between the rotor core and the tension rod.

Laskaris discloses a dowel (30) coupling the housing (20,36) to the tension rod (38). Laskaris discloses a hollow pin (30) coupling the housing (20,36) to the tension rod (38). Laskaris discloses a dowel pin (30) for securing the housing (20,36) to the tension rod (38). Laskaris discloses that the dowel (30) is hollow. Laskaris discloses an insulating tube sleeve (30) between the rotor core and the tension rod (38). Laskaris invention has the purpose of providing a rigid support to the windings.

It would have been obvious at the time the invention was made to modify the rotor of Shervington et al. and Sterret et al. and provide it with the fastening configuration disclosed by Laskaris for the purpose of providing a rigid support to the windings.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate the fastening means with the claimed materials since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

3. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shervington et al. in view of Sterret et al. as applied to claim 21 above, and further in view of Nottingham (U. S. Pat. 4,072,873).

Shervington et al. and Sterret et al. substantially teach the claimed invention except that it does not show clamps at opposite ends of the coil.

Nottingham discloses clamps (25,26) at opposite ends of the coil (18). Nottingham's invention has the purpose of securing the end turns in a highly conductive and mechanically strong union.

It would have been obvious at the time the invention was made to modify the rotor of Shervington et al. and Sterret et al. and provide it with the clamps disclosed by Nottingham for the purpose of securing the end turns in a highly conductive and mechanically strong union.

Allowable Subject Matter

Claims 7-8, 19, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art's references of record do not disclose that the pin extends through an aperture in an end of the tension rod and through apertures in side flanges on the coil housing.

The prior art's references of record do not disclose that the pin extends through an aperture in an end of the tension rod and through the coil housing, and a locking-nut securing the pin to the housing.

The prior art's references of record do not disclose attaching the end of the tension bar to the housing by inserting a dowel pin through apertures in the end of the tension bar and housing.

The prior art's references of record do not disclose that the tension rod has a flat end abutting the coil.

Response to Arguments

Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

Guillermo Perez
May 15, 2003